ABSTRACT:

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To provide an apparatus for calculation of correlation that can take a correlation even when a frequency error is relatively large. With a 0-th correlator for taking, to output, a correlation between a reference signal and a measurement signal, an n-th degree correlator including an e^{jwt} multiplier of calculating a frequency component addition signal having a frequency component added to the reference signal, and a correlation calculator for taking, to output, a correlation between the frequency component addition signal and the measurement signal, and an adder for adding an output of the 0-th degree correlator and an output of the n-th degree correlator and the output of the n-th degree correlator added at the adder do not have an increased noise/correlation value ratio, even when a frequency error is large. Accordingly, a correlation can be taken even with an increased frequency error. Another embodiment includes a conceptual block diagram in which a symbol D(o) is multiplied by a frequency.